Saskatchewan
Agriculture
and Food

FINAL REPORT

Agriculture Research Branch
Saskatchewan Agriculture and Food

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EVALUATION AND DEVELOPMENT OF AGRONOMIC MANAGEMENT PROGRAMS FOR NEWLY RELEASED POTATO VARIETIES FOR LOCAL AND EXPORT MARKETS

Funded by
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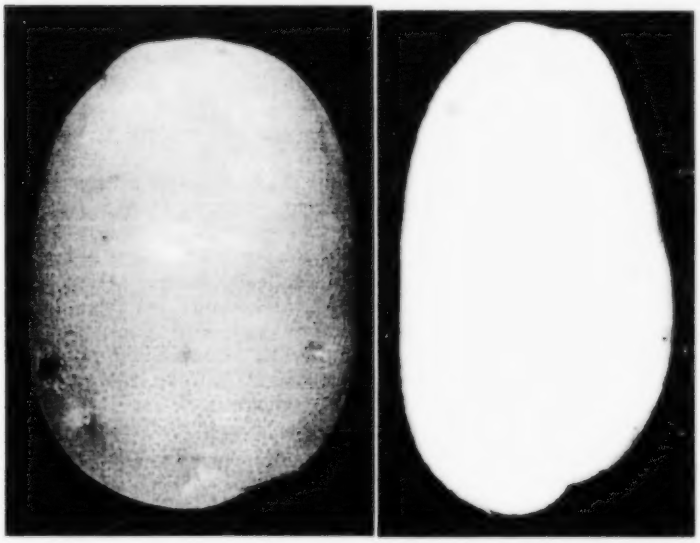
Evaluation of Newly Developed Potato Clones for Production in Saskatchewan

TAD Project No: 2000158



AC Pacific Russet - a new russet-skinned line, released by the Prairie Potato Research Program for use by members of the Saskatchewan Seed Potato Growers Assoc.

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Evaluation of Newly Developed Potato Clones for Production in Saskatchewan

Abstract

The continuing health and expansion of Saskatchewan's potato industry depends on the growers planting the best available cultivars. The Prairie Regional Potato Program (PRPP) develops or introduces potato lines with characteristics required by the potato industry on the Canadian prairies. The Prairie Regional Potato Testing Program (PRPTP) is responsible for evaluating the new material coming out of the PRPP. **This project covered Saskatchewan's participation in the PRPTP from 2001 through 2004.** Each year, more than 100 breeding lines developed by breeders at Agriculture Canada and their co-operators were evaluated for vigor, earliness, yields, tuber appearance, disease and insect resistance, flavor and processing characteristics under prairie growing conditions. Results of PRPTP trials determine which releases are licensed, named and made available to prairie potato growers. From 1995-2004, the PRPP released 81 lines with sufficient merit to warrant industry evaluation. Over 35% of the potatoes grown on the Canadian Prairies in 2002 were varieties developed by the PRPP. The Saskatchewan Seed Potato Growers Association (SSPGA) has used the data generated by the PRPTP trials as a basis for obtaining exclusive licences for several lines including **AC Ptarmigan, AC Peregrine Red** and most recently **AC Pacific Russet**. Exclusive ownership of new and improved varieties will provide Saskatchewan's potato industry with an advantage in a competitive marketplace.

Executive Summary

The potato industry in Saskatchewan is, at present, too limited to justify supporting a full-scale breeding program, yet the continuing health and expansion of the industry depends on the growers planting the best available cultivars. The Prairie Regional Potato Program (PRPP) of Agriculture Canada Lethbridge conducts breeding, early generation selection and pathology trials on potato breeding lines potentially suited to the Prairie environment. Each year, the provinces of BC, AB, SK and MB conduct regional tests to evaluate the performance of the breeding lines being generated by the PRPP. Promising clones from the northern U.S. are evaluated as well as the clones developed by other Canadian breeders. **This project covered Saskatchewan's participation in the PRPP and the PRPTP from 2001 through 2004.** The PRPTP are conducted at two sites in Saskatchewan (Saskatoon and Outlook). More than 100 breeding lines were evaluated during each cropping seasons for vigor, earliness, yields, tuber appearance, disease and insect resistance, flavor and processing characteristics. Results of PRPTP trials conducted in Manitoba, Alberta, Saskatchewan and British Columbia are considered in determining which releases should be licensed, named and made available to prairie potato growers. From 1995-2004, the PRPP released 81 lines with sufficient merit to warrant industry evaluation. Over 35% of the potatoes grown on the Canadian Prairies in 2002 were varieties developed by the PRPP. The Saskatchewan Seed Potato Growers Association (SSPGA) has used the data generated by the PRPTP as a basis for requesting exclusive licences for three lines derived from the Prairie Potato Breeding Program. **AC Ptarmigan** is now considered the industry standard for extremely early table potatoes. **AC Peregrine Red** has better skin color and storage characteristics than Norland which used to be the industry standard. This variety has created considerable interest across Canada and SSPGA members have been very active in generating seed of AC Peregrine Red in anticipation of market demand. Most recently, the Saskatchewan Seed Potato Growers have been appointed as agents for **AC Pacific Russet** - a high yielding russet-type potato with superior yields and cooking quality than the standard Russet Norkotah. **The SSPGA has 4 additional lines derived from the PRPP under review for possible licencing.** Exclusive access to the new and improved varieties derived from the PPRP will provide Saskatchewan's potato industry with an important advantage in a competitive marketplace.

Project Background

Cultivar testing represents a highly efficient and cost effective means of maintaining and/or improving yields, quality and profitability or crop production. Industry needs may be matched with breeders achievements without the expense of maintaining a full breeding program. Growers are provided with the cultivars required to meet changing production practices, pest pressure and market demand.

Potato production in Saskatchewan is, at present, too limited to justify supporting a full scale breeding program, yet the continuing health and expansion of the industry depends on the growers planting the best available cultivars. The Prairie Regional Potato Testing Program (PRPTP) was initiated in 1979 at the request of the Prairie Potato Council to develop and test potato lines with characteristics required by the potato industry on the prairies. The Prairie Potato Regional Program (PPRP) administered by Agriculture Canada (Lethbridge) has provided the personnel responsible for breeding, early generation selection and pathology. The participating western provinces conduct the regional test sites. Promising clones from the northern central and western U.S. are evaluated in the PRPTP as well as the clones developed by Canadian breeders. Saskatchewan has participated in the Prairie Regional Potato Trials since their inception, with funding provided through the Agriculture Development Fund and the Technology Adaptation Programs of Saskatchewan Agriculture and Food.

This project was originally designed to support Saskatchewan's participation in the Prairie Regional Potato Testing Program during the 2001-2003 cropping seasons. However, due to the illness of a key project member during 2003, no trials were conducted that year. The project was granted a one year, no cost extension to cover the 2004 cropping season. All the trials were conducted by the Department of Plant Sciences in conjunction with Canada Saskatchewan Irrigation Development Centre in Outlook.

The Prairie Regional Potato Testing Program is conducted in accordance with a standardized protocol which is followed at all testing sites. Clones or cultivars are included in the evaluation trials based on recommendations by the Cultivar Evaluation Committee of the Prairie Potato Council. Each year, performance of the various lines are evaluated by the Breeding and Selection Committee of the PRPP, with sub-standard types dropped from the trials, outstanding performers graduated to more extensive testing and the remainder examined again in the next year. There are five levels of testing, from the ***Adaptation trials*** in which new entries are evaluated in small non-replicated plots, to the much larger replicated ***Main Crop trials***, in which the most promising lines are evaluated against standard cultivars. Entries are evaluated for vigor, earliness, yields, tuber appearance, disease and insect resistance, flavor and processing characteristics. Results of trials conducted in Manitoba, Alberta, Saskatchewan and British Columbia are considered in determining which releases should be licensed, named and made available to prairie potato growers. While most of the trial sites are irrigated, there are also two dryland sites (Edmonton and Carmen).

All trials in Saskatchewan were conducted at the Horticulture Science Potato Plots in Saskatoon and at the Canada Saskatchewan Irrigation Diversification Centre in Outlook. The use of two sites allows for more thorough testing of the cultivars under differing conditions while also raising the profile of the trial with local grower groups. The Saskatoon site is a sandy loam (pH 7.4) while the Outlook site is a moderately saline, sandy loam (pH 8.2). Standard irrigated production practices are employed at both sites. A portion of the crop is harvested in late August to allow for evaluation of early yield potential. The remainder of the crop is harvested at the normal time in late September. The crop is stored under standard conditions and the processing and culinary quality is evaluated after 60 and 90 days of storage.

The breakdown of trials conducted at the two sites is as follows:

		Saskatoon Site	Outlook Site
1)	Adaptation Trial		
	- 30-40 most recent releases	yes	no
	- 8 plants/plot		
	- non-replicated		

2)	Advanced Adaptation Trial			
	- Level I	- 40 lines - 8 plants/plot - 2 replicates	yes	no
	- Level II	- 50 lines - 12 plants/plot - 4 replicates	yes	no
3)	Prairie Main Crop Trial			
		- 20 advanced lines - 20 plants/plot - 4 replicates	yes	yes
4)	Prairie Early Replicated Trial			
		- 10-15 advanced lines for areas with shorter growing seasons - 20 plants/plot - 8 replicates	yes	yes
5)	Prairie Region Registration Trials			
		- evaluate newly registered lines - European and N. America breeding programs	no	yes

Data Collected: Emergence time, % stand, yield components at 85 and 110 days after planting, tuber appearance, plant and tuber disease incidence and reactions, boiling, baking, chipping, frying and storage quality.

Progress to March 30, 2005

All trials were completed as planned. All yield and processing quality evaluations have been completed. The Saskatchewan data was sent to the PRPP administrators in Lethbridge for inclusion in the prairie-wide evaluation of the new cultivars. The data were used in determining which cultivars to release, which to drop and which to further evaluate.

Notable Program Achievements

In 2002, over 35% of the potatoes grown on the Canadian Prairies were cultivars developed by the PRPP. The release and introduction of new cultivars by the Prairie Regional Potato Program has resulted in increased acreage and enhanced competitiveness, while also opening potential export markets. Some notable releases from this program are;

Niska - is a chip cultivar with excellent processing characteristics and long term storage capability. Niska has consistently rated as one of the top varieties in the cross Canada chipping trials. Exclusive European rights to Niska have been sold to a German company.

AC Ptarmigan - is an early maturing cultivar licenced in 1993 and suited for both chipping and table use. A member of the Saskatchewan Seed Potato Growers Assoc. has the exclusive licence for Ptarmigan, with the royalties being shared between the Saskatchewan Seed Potato Growers Association and the Prairie Regional Potato Program.

Amisk - a clonal variant of Ranger Russet, licenced in 1993, has joined Russet Burbank as the dominant french fry variety in North America. Significant acreages of Ranger and Amisk seed are being grown in Saskatchewan for export into the United States. Growers are

beginning to prefer Amisk over Ranger, as it tends to be more uniform with less problems with blackspot bruising.

AC Stampede Russet - released from the program in 1999, this early maturing russet variety has excellent early yield potential with acceptable processing characteristics. AC Stampede Russet also has potential for used as an early season russet for the fresh-pack market. Maple Leaf Foods of Alberta has been granted an exclusive licence for AC Stampede Russet.

AC Glacier Chip - is a high yielding chipping cultivar with excellent processing characteristics. Exclusive commercialization rights for this line have been requested by Potato Growers of Alberta.

AC Maple Gold - is a high yielding yellow fleshed potato with potential in both the fresh market and french fry sectors. Exclusive commercialization rights for this line have been requested by Maple Leaf Foods.

FV 9649-6 A fresh market russet type. Produces a very uniform crop with very shallow eyes. Resistant to hollow heart, after cooking discoloration and sloughing. Registration trials indicate yields at maturity superior to Burbank and equivalent to Norkotah. The variety is exceptionally early but lacks processing quality. **SSPGA had the exclusive licencing agreement for this variety with AAFC. This agreement started in 1999 but was terminated in 2001 due to erratic performance of the line in grower trials.**

AC Peregrine Red tested as ND2937-3, this is a round/oval dark red skinned line with shallow eyes and uniform tubers. AC Peregrine Red has superior red color, particularly after storage. It also shows little after cooking discoloration. AC Peregrine Red is slower developing than the standard Norland, resulting in poor yields in short growing seasons. AC Peregrine does not perform well under late season drought stress. Scab levels are slightly higher than Norland, but it is more resistant to Fusarium dry rot. **SSPGA has the exclusive licencing agreement for this variety with AAFC and the breeders at NDSU.** Commercial growers who have had an opportunity to test small quantities of AC Peregrine Red are enthusiastic about its color and uniformity but express concern about its lateness. In 2004, about 40 acres of high generation seed of AC Peregrine Red were grown in Saskatchewan. The 2005 cropping season will be the first opportunity for commercial scale evaluation of this variety. One of the main limitations of this cultivar is the fact that the breeders in North Dakota have stipulated that it cannot be licenced into the United States. This is unfortunate as AC Peregrine Red should perform well in areas with a slightly longer growing season.

AC Peregrine Red

AC Pacific Russet - this most recent release from the PRPP (tested as VO168-3) is a russet skinned alternate to the standard variety Russet Norkotah. AC Pacific Russet has superior yields and culinary quality than Russet Norkotah. AC Pacific Russet is exclusively licenced to the SSPGA and Alberta Potato Growers Association

AC Pacific Russet

Prairie Potato Breeding Consortium Releases presently under evaluation by the SSPGA

The Saskatchewan Seed Potato Growers Association (SSPGA) working in affiliation with the Department of Plant Sciences is conducting pre-licencing trials of the following lines derived from the Prairie Potato Cultivar Program. These trials are designed to evaluate key performance factors such as response to plant spacing, time of planting and harvest. Information of this type will allow growers to better select cultivars with characteristics in demand in their markets.

Materials and Methods

Site Descriptions

The main trials of the lines under review by the Saskatchewan Seed Potato Growers Association in 2001 through 2004 were conducted on the Plant Sciences Department Potato Research plots located in Saskatoon. The site features a sandy loam, pH 7.8, EC < 1 dS, with 4% O.M. This is the first year this site has been cropped to potatoes - for the previous 5 years its was in dryland alfalfa. A smaller trial was conducted at a commercial grower site outside of Saskatoon. This site was managed by the grower co-operator and all production practices were based on his standard methods.

Each treatment plot consisted of a single, 8-m long section of row. Separate plots were grown for early and final harvests. The row spacing was 1 m between rows with 25 cm between plants within a row. Weed control was achieved through application of herbicides and cultivation. All trials were irrigated.

No significant problems with diseases or insects were observed in any of the trials. The early plots were flailed at 90 days after planting. The stalks remaining after flailing were desiccated using Reglone. The early crop was harvested in the second week of September. The main harvest was desiccated with diquat in mid-September, flailed a week later and harvested in early October. The crop was graded into size categories; small = < 44 mm diam., 44 < medium < 88 mm and oversize = > 88 mm diam. Seed yields consist of all potatoes <88mm in diam, while tablestock yields consist of all potatoes >44 mm in diam. The boiling, baking, chipping and frying quality of the various lines was evaluated for the 90 and 120 day harvests.

The SAS program was used to determine the statistical significance of the data in the replicated trial. **Key findings are bolded.**

2003 Results

The 2003 growing season was excellent, providing supplemental irrigation was available. Less than 4" (12 cm) of rainfall was received over the growing season. A total of 10" (25 cm) of supplemental irrigation was applied to the plots in Saskatoon. The grower estimated that he applied 8" (20 cm) of water to his crop.

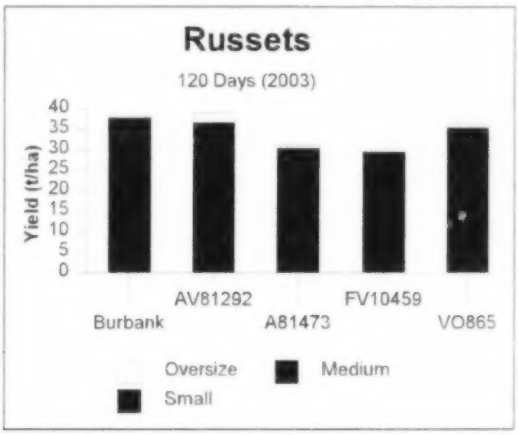
Reds

Table 2003-1. Yields and tuber characteristics for newly released lines of Red potatoes (2003 Trial).

	Yield (% of Norland)				Specific Gravity	Average Tuber Size (g)
	Dryland	Irrigated		Grower	Average Tests 1-4	Average Tests 1-4
	120 DAP	90 DAP	120 DAP	120 DAP		
Norland	100	100	100	100	1.079	151
Cherry Red	76	84	84	83	1.09	144
AC Peregrine	95	91	91	77	1.084	95
Cal Red	73	47	62	64	1.078	96
CV89023	84	85	91	59	1.083	107

Figure 2003-1 Yields for Russet-type potatoes in 2003.

The red line CV 89023 did not perform well in any of the 2003 trials. In the russet trials, AV81292 and VO 865 appeared most promising although neither out-performed the standard Russet Burbank.



2004 Results

The 2004 growing season was unusually cool throughout. This slowed establishment of the crop but produced excellent conditions during tuber bulking. Consequently yields were relatively high in both the dryland and irrigated trials. 27 cm of rainfall was received over the growing season. A total of 30 cm of

supplemental irrigation was applied to the plots. No significant problems with diseases or insects were observed.

Reds - In the irrigated trial, Norland clearly outyielded all other red-skinned lines at all harvest dates (Figures 2004-1 a-d). The only problem with Norland is its tendency to oversize - this was becoming apparent by the third harvest. The yield difference between Norland and AC Peregrine in the irrigated trials was wider than in other years. This may reflect the relatively short and cool growing season experienced in 2004. AC Peregrine is relatively slow to develop and consequently does better in a long growing season. It is interesting to note that in the dryland trial, yields of AC Peregrine and Norland were very similar (Table 2004-2). Both of these lines appear to be quite drought tolerant. Tuber set by AC Peregrine is far higher than Norland resulting in a much smaller average tuber size. In both the irrigated and dryland trials, the performance of the two AAFC lines was much poorer than in previous years. This may be a function of poor seed quality.

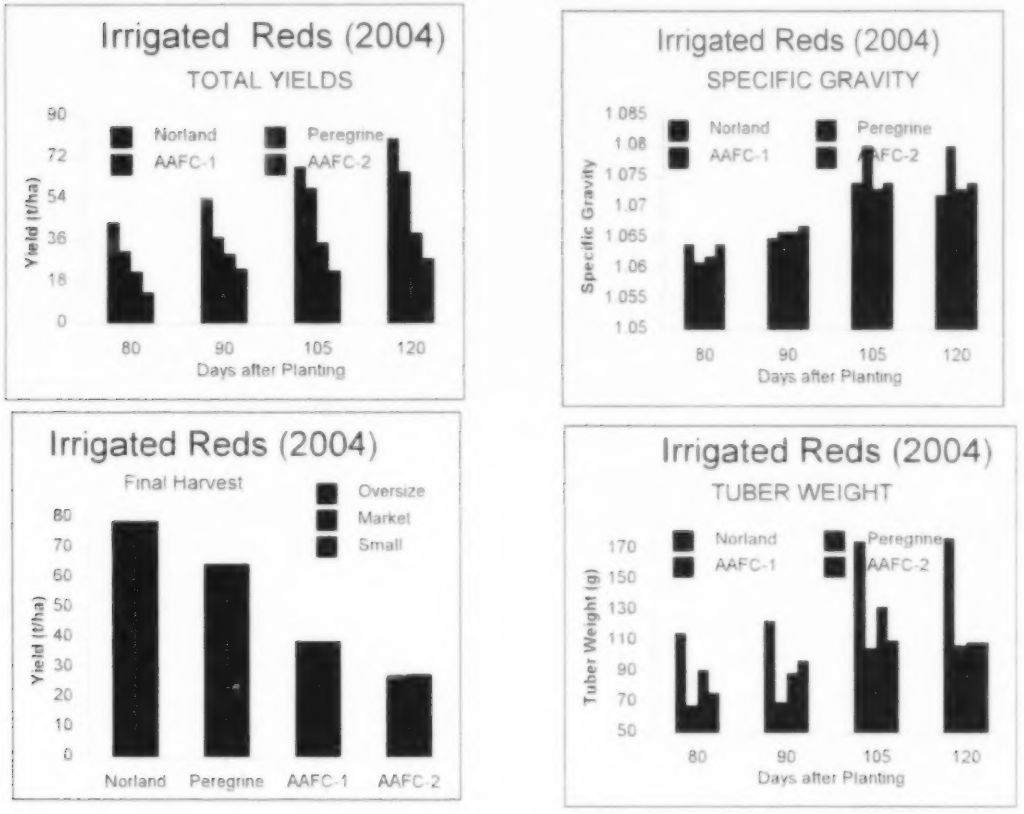


Figure 2004-1 a-d. **Yields (a), average tuber weights (b), tuber size profile at the final harvest (c) and specific gravities for various red-skinned potatoes under irrigation.**

Table 2004-2. Yield and quality components for Red potatoes under dryland conditions in 2004.

Line	Yield (t/ha)	Specific Gravity	Avg Tuber Wt. (g)
Reds			
Norland	45.2 a	1.074 c	131 a
AC Peregrine	46.5 a	1.078 b	94 c
CV 89023	26.6 b	1.075 c	106 b
CV 89024	24.4 b	1.080 a	85 c

Values within columns followed by the same letter are not significantly different (p=0.05)

Russets - At the early harvest dates in the irrigated trial in 2004 the new SSPGA line Pacific Russet produced substantially higher yields than the other lines tested (Figure 2004-2 a-d). This new variety appears to size quickly - making it well suited to Saskatchewan's relatively short growing season. By contrast, GemStar is slow to establish, but given a long enough growing period it appears to have excellent yield potential and acceptable processing characteristics under irrigation. In both the irrigated and dryland trials, GemStar appears to set relatively few tubers and the average tuber size was consequently large. This may be desirable for processors but may represent a challenge in seed production. In the dryland trial which was harvested at 120 days after planting, GemStar was the highest yielding line (Table 2004-2). The AAFC line was not outstanding in any of the categories evaluated in either the irrigated or dryland trials trial.

Table 2004-2. Yield and quality components for Russet potatoes under dryland conditions in 2004.

Line	Yield (t/ha)	Specific Gravity	Avg Tuber Wt. (g)
Russets			
R. Norkotah	37.5 ab	1.084 ab	138 b
R. Burbank	39.6 ab	1.085 ab	140 b
AC Pacific Russet	37.0 ab	1.080 c	152 b
GemStar	43.4 a	1.084 ab	192 a
VO865-1	29.3 b	1.086 a	138 b

Values within columns followed by the same letter are not significantly different (p=0.05)

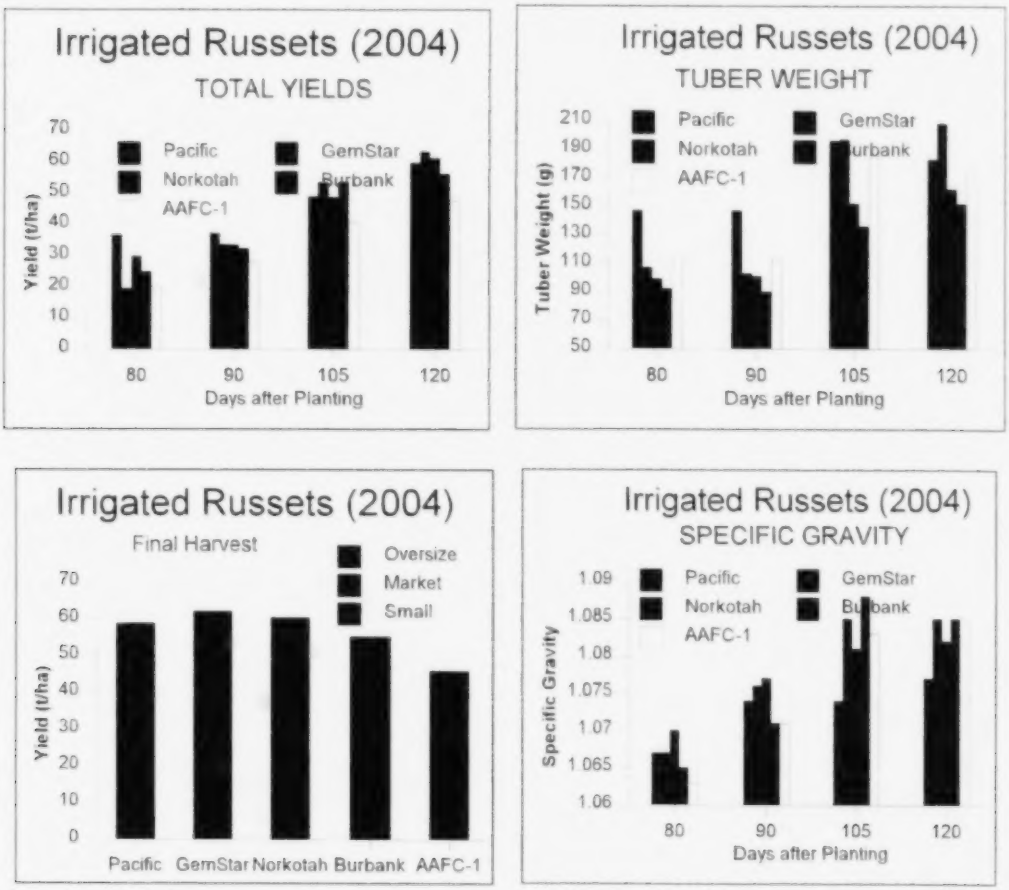


Figure 2004-2 a-d. **Yields (a), average tuber weights (b), tuber size profile at the final harvest (c) and specific gravities for various russet-skinned potatoes under irrigation.**

Performance Summary for Lines released by the Prairie Potato Breeding Consortium (2002-2004).

CV 89023

Appearance - excellent dark skin color. Oval tubers. Skins at 90 days. **Less tendency to oversize than Norland.**
Yields - Under irrigation, yields at 90 days were lower than Norland, **but exceeded Norland after 120 days in previous trials. Performed poorly relative to Norland and AC Peregrine in 2003 and 2004 - possibly due to problems with seed quality.**
Scab reaction - similar to Norland
Quality - baking and boiling quality were similar to Norland, although it is slightly drier.
Status - **worthy of continued evaluation if clean seed source can be obtained.**

CV 89075

Appearance - oval red skinned, very uniform shape. Good appearance at 90 and 120 days
Yields - **based on the 2003 data, this line appears slightly superior to the standard. Average tuber size was smaller than Norland**
Scab reaction - similar to Norland
Quality - Good baked.
Status - **dropped in 2004 due to disease problems in the seed.**

VO 391-4

Appearance - Light red oblong tubers. High percentage with deformity
Yields - **poor yields at both 90 and 120 days in previous years but yielded well in 2003.**
Scab reaction - similar to Norland
Quality - somewhat mealy with occasionally poor flavor. Low specific gravity.
Status - **dropped in 2004 due to undesirable shape.**

VO 498-1

Appearance - excellent dark skin color. Round tubers but variable shape. Average tuber size is smaller than Norland.
Yields - yields are lower than Norland at both 90 and 120 days.
Scab reaction - slightly more sensitive than Norland
Quality - baking and boiling quality were similar to, or better than Norland. Somewhat drier texture than Norland.
Status - **dropped in 2003 due to poor yields, uneven shape and scab sensitivity**

W1100

Appearance - skin color superior to Norland and has more uniform shape. Average tuber size much smaller than Norland.
Yields - Poor at both 90 and 120 days
Scab reaction - **more resistant than Norland**
Quality - baking and boiling quality were similar to Norland
Status **dropped in 2003 due to poor yield potential**

Russets

AV81292

Appearance - elongated, light russet. Acceptable uniformity at both harvest dates. Average tuber size similar to Burbank.
Yields - **in previous years showed equal or superior to standards especially under moisture stress**. Appears to bulk early. **In 2003 again performed very well**
Scab reaction - slightly less scab resistant than Burbank

Quality - Fry colors at 90 days were not exceptionally good but were **superior at 120 days**. Boiling and baking quality were as good as Burbank. Rejected by processors due to poor gravities.
Status **dropped in 2004 due to limited market potential**

FV10459-8

Appearance - oval, white skinned. Even shape, but unattractive. Small tuber size, but tends to hollow.
Yields - **yields consistently inferior to standards.**
Scab reaction - sensitive to scab - similar to Shepody
Quality - slightly yellow flesh. **Fry colors were exceptionally good at both harvest dates.** Relatively low gravities.
Status **- dropped in 2004 due to processing problems and poor appearance**

VO 865-1

Appearance - good looking, dark russet. Uniform size, medium tuber size distribution.
Yields - variable from trial to trial. Range from inferior to superior to standards in previous years. **Did very well in 2003 and reasonably well under irrigation in 2004.**
Scab reaction - **more scab resistant than Burbank**
Quality - poor fry color 90 days but acceptable at 120 days. Reasonably good gravities. Baking quality appears mixed.
Status **- worth continuing to test, but fresh market niche is questionable given recent registration of AC Pacific Russet. Potential as processing line.**

A81473-2

Appearance - heavy russet, oblong, very uniform shape. Good appearance at 90 and 120 days
Yields - **well below standards at both 90 and 120 days**
Scab reaction - more resistant than Russet Burbank
Quality - good fry color at 90 days, unexceptional at 120 days. Good baked.
Status - **dropped in 2004 due to poor yield potential**

New Clones Released by the Prairie Potato Breeding Consortium to the Industry for Evaluations in 2004-05

Red-skinned selections

FV12486-2

Maturity: Early
Yields: Marketable yield inferior to Norland at 80 and 90 days after planting
Fresh appearance: good dark red skin
Internal quality: boiling texture drier than Norland at 80 days, but similar at 90 days. Baking texture similar to Norland at both harvest dates.
Potential Utilization: early crop, fresh market

Russet selections

CV96022-3

Maturity: Early
Yield: Marketable yield superior to Russet Burbank, but lower oversize yield
Fresh appearance: Good
Internal quality: Fry color superior to Russet Burbank, with similar specific gravity. Boiling texture drier than Russet Burbank, while baking texture somewhat similar. Poor culinary quality (boiling flavour).
Potential utilization: French fry

CV96064-1

Maturity: Early-medium
Yield: Marketable yield similar to Russet Burbank
Fresh appearance: Good

Internal quality: Fry color superior to Russet Burbank, with similar specific gravity. Boiling and baking textures somewhat similar to Russet Burbank.
Potential utilization: dual purpose (French fry/fresh)

FV12235-3

Maturity: medium
Yields: Marketable and oversize yield superior to Russet Burbank
Fresh appearance: Excellent
Defects: hollow heart occurrence at very low levels
Internal quality: Yellow flesh. Fry color superior to Russet Burbank, with similar specific gravity. Boiling and baking textures somewhat similar to Russet Burbank.
Potential utilization: dual purpose (French fry/fresh)

V1102-1

Maturity: Early
Yield: Marketable yield superior to Russet Norkotah at 80 and 90 days after planting.
Fresh appearance: Good
Internal quality: Fry color and specific gravity slightly inferior to Russet Norkotah at both harvest dates. Boiling and baking quality similar to Russet Norkotah.
Potential utilization: dual purpose (Early French fry/fresh)

Round/Oval Chipping lines

FV12246-6

Maturity: Early
Yields: Marketable and oversize yield superior to Atlantic at 90 days after planting
Defects: deformities and hollow heart occur at very low levels
Internal quality: Chipping colour and Specific gravity superior to Atlantic at 80 and 90 days.
Potential utilization: early harvest chip

FV12291-10

Maturity: Early
Yields: Marketable yield similar to Snowden, with less oversize yield.
Defects: none
Internal quality: Chip colour superior to Snowden, but inferior specific gravity
Potential utilization: early maincrop chip

CV96053-4

Maturity: late
Yields: Marketable yield superior to Snowden, with less oversize yield.
Defects: none
Internal quality: Chip colour inferior to Snowden, but similar specific gravity
Potential utilization: maincrop chip

CV96105-2

Maturity: medium-late
Yield: Marketable yield superior to Snowden, with lower oversize yield
Defects: none
Internal quality: Chip colour superior to Snowden, and similar specific gravity
Potential utilization: maincrop chip

V1002-1

Maturity: early
Yields: Marketable slightly inferior to Atlantic at 90 days after planting
Defects: deformities and hollow heart occurred at levels less than Atlantic
Internal quality: Chipping colour superior to Atlantic at 80 days and similar at 90 days, but slightly lower specific gravity.
Potential utilization: early chip

Technical Reports

1) 2001 Prairie Regional Potato Cultivar Testing Report for Saskatchewan - December 2001
2) 2001 Vegetable Cultivar Evaluation Trial Results - Potato trials - April 2002
3) 2001 Annual Report by the Saskatchewan Irrigation Development Centre
4) 2001 Report to SSPGA on Field Performance of Licenced Lines - April 2002
5) 2003 Prairie Regional Potato cultivar Testing Report for Saskatchewan - December 2003
6) 2003 Vegetable Cultivar Evaluation Trial Results - Potato Trials - February 2004.
7) 2003 Report to SSPGA on Performance of Licenced Lines - November 2003.
8) 2004 Prairie Regional Potato cultivar Testing Report for Saskatchewan - December 2004
9) 2004 Vegetable Cultivar Evaluation Trial Results - Potato Trials - February 2005.
10) 2004 Report to SSPGA on Performance of Licenced Lines - December 2004.

Personnel on salary from project inception -

Jackie Bantle (Research Technician - part-time)	Since 2001
T. Sander (Part time assistant)	2001 and 2003
K. Leray (Part time Casual)	2001-2004
P. Hagel (part time assistant)	2001 and 2004

ided by the Office of Research Accounts.

Project Related Extension Activities

1) Results were presented to growers at;
   a) Prairie Potato Council Annual Meetings 2001
   b) Saskatchewan Seed Potato Growers Annual Meeting 2001
   c) Saskatchewan Vegetable Growers Annual Meeting 2001
   d) Prairie Potato Council Annual Meetings 2003
   e) Saskatchewan Seed Potato Growers Annual Meeting 2003

2) Description of AC Pacific Russet was published in the American Journal of Potato Research in 2004.
   Description of AC Peregrine Red was published in the American Potato Journal in 2001
   Description of AC Maple Gold was published in the American Potato Journal in 2001.
   Description of AC Glacier Chip was published in the American Potato Journal in 2001

3) Field plots were toured as components of the 2001 through 2004 Plant Sciences Department and C.S.I.D.C. field days, Saskatchewan Seed Potato Growers Field Day, and various other events.